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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/635,183	08/06/2003	Pekka Kekki	16756	9160

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SUITE 300  
GARDEN CITY, NY 11530

EXAMINER

KOSAR, AARON J

ART UNIT	PAPER NUMBER
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1609

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05/23/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

### Application No.

10/635,183

### Applicant(s)

KEKKI, PEKKA

### Examiner

Aaron J. Kosar

### Art Unit

1609

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on June 15, 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

Applicant's amendment and argument filed June 15, 2006 in response to the non-final rejection, are acknowledged and have been fully considered.

Currently, original claims 1-17, 19-24 and currently amended claim 18 are pending and have been examined on the merits.

#### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-24 remain rejected under 35 U.S.C. 103(a) as being unpatentable over LEHMUSSAARI, *et al* (U.S. Pat. 4,675,296) in view of MARINCHENKO, *et al* (Appl. Biochem. Microbiol. 15(6): 670-63 (1979), for the reasons stated in the prior Office action.

Applicant has responded by arguing that Lehmuusaari requires *not* breaking the husk without prior crushing or grinding (Response, page 6, ¶2) and that the lack of teaching to use cellulase in *extracting* the amylolytic enzyme,  $\beta$ -amylase, from cereal grains (Response, page 6, ¶3), therefore, teaches away from the presently claimed invention.

Applicant argues that Marinchenko merely teaches increasing amylolytic enzyme activity by the addition of cellulase, but not *extracting*  $\beta$ -amylase. Applicant indicates Marinchenko's teaching of the benefit of increasing free amylase (Response, page 7, ¶1). Applicant further argues that Marinchenko is a method of using the cereal to produce sugars, not a method of extracting enzyme from cereal, and would result in an increase of  $\alpha$ -amylase.

However, while Lehmussaari does teach the advantages of using an intact or partially intact husk to more selectively extract  $\beta$ -amylase, Lehmussaari teaches “at least partially dehusked” barley (column 2, Summary of Invention) and does *not* preclude the use of ground or otherwise degraded material in extracting  $\beta$ -amylase in a less purified form. For example, Lehmussaari teaches extracting  $\beta$ -amylase from a number of barley forms, including ground/pretreated forms such as barley flour (Example I, Table I). Cellulase is not explicitly used in the process of Lehmussaari as has been noted in the previous Office action.

Furthermore, it is noted that Applicant’s invention, such as in claim 1, is only limited to “cereal” and extractions *comprising* the mentioned limitations. Additional steps or transformations (such as malting) and further components are not precluded by the claims. Additionally, Applicant’s arguments regarding the nature of  $\alpha$ -amylase (Applicant’s Response, page 7, ¶3) do not exclude the likeliness that  $\beta$ -amylase would also be increased and a high-yield/ultrapure/isolated form of  $\beta$ -amylase is not required by the claims.

The motivation to use cellulase was presented as taught by Marinchenko, in teaching the presence of  $\alpha$ - and  $\beta$ -amylases, and increased amylolytic activity in barley preparations as presented in the previous Office action.

Applicant has argued, the description of Marinchenko does not distinguish between  $\alpha$ - or  $\beta$ -amylolytic activity; however, Marinchenko teaches an increase in net amylolytic activity by freeing amylases. Emphasis on the plural, *amylases* (see Marinchenko, abstract), demonstrates that Marinchenko anticipates using cellulase to treat barley compositions comprising cellulose and amylases ( $\alpha$ - and/or  $\beta$ -).

Applicant has also argued that Marinchenko does not teach extraction. Lacking a definition in Applicant's specification, the minimum requirement to constitute an extraction may include the mere resolution of any compound(s) from another (*e.g.* freeing of amylases from the original  $\beta$ -amylase-containing matrix). Extraction does not require isolation of the product in purified/ultrapurified form, but only a physical separation such as a release from the matrix.

Additionally, while Marinchenko teaches extraction as discussed *supra*, in the alternative, where Marinchenko does not enumerate a detailed  $\beta$ -amylase extraction, Lehmuusaari provides for further treating a composition to purify  $\beta$ -amylase (Lehmuusaari, column 3, lines 19-31).

Applicant's arguments have been fully considered, but found to be not persuasive. The rejection of claims 1-24 under 35 U.S.C. 103 (a) is therefore **maintained**.

### ***Conclusion***

Applicant's amendments necessitated the ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 1609


however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron J. Kosar whose telephone number is (571) 270-3054. The examiner can normally be reached on Monday-Thursday, 7:30AM-5:00PM, ALT. Friday, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mary Mosher can be reached on (571) 272-0235. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Aaron Kosar  
Patent Examiner

  
MARY MOSHER  
SUPERVISORY PATENT EXAMINER  
5-21-07